ENVIRONMENTAL TECHNOLOGIES – SWEDEN

I. Introduction and Brief Overview

Sweden was one of the first countries in the world to recognize the growing environmental problems and include these on the political agenda. Environmental awareness increased during the 1960s and older regulations governing health care and water pollution were replaced by new legislation to control the emissions of all types of pollution. During its Presidency of the EU in the first six months of 2001, Sweden made the environment and sustainable development one of its priorities, alongside with employment and enlargement. Before the Presidency, four environmental issues were particularly focused upon a new EU environmental program, work on climate change, chemical policy and more environment-friendly products. At a meeting in June, the environment ministers were able to agree on these issues.

It is well known today that environmental issues affect all aspects of society, from large production systems to the lifestyle of individuals. Sweden has come a long way in the control of urban and industrial pollution. The challenge today is to reduce the diffuse pollution of products and the agricultural and transport sectors. Therefore the focus of environmental policy is now moving towards issues concerning products, for instance, recycling and waste minimization, as well as infrastructure and lifestyles.

Sweden’s ultimate vision in environmental work is the establishment of an ecologically sustainable society. The purpose of the environmental policy is to protect human health, preserve biological diversity, manage natural resources and protect natural and cultural landscapes.

Swedish industry views environmental considerations as a challenge rather than a restriction and many companies have already taken the initiative to integrate environmental concern in their processes and products. Market demand has played a major part in the development of environmentally sound products and services. Swedish industry is also to the fore in applying the international environmental management standards, EMAS and ISO 14000, as well as using life cycle assessments as a method for analyzing and evaluating the environmental impact of their products and services.

II. Market Size

The following statistics are unofficial estimates:

(U.S.$ millions)	2000
Total Market Size	1,157
Total Local Production	1,512
Total Exports	960
Total Imports	605
Imports from the U.S.	81

Exchange rate used: US$1 equals SEK 9.17

III. Market Analysis

A) Air Pollution Control

By international standards, air quality in Swedish urban areas is good. Concentrations of air pollutants in these areas are caused both by local emissions and long-range transboundary air pollution. This is particularly true for sulphur dioxide, soot and ground-level ozone. Concentrations of nitrogen dioxide however are mainly of local origin. The levels of sulphur dioxide and soot were reduced substantially in the 1970s and 1980s, mainly as a consequence of the development of district heating and the implementation of measures to reduce emissions from heating and industry.

Emissions of some air pollutants from traffic have decreased in recent years. Nonetheless, traffic accounts for 70-80 per cent of total emissions of nitrogen oxides and many other substances (not sulphur) in urban areas.

The government and local municipalities are dedicated to stricter environmental guidelines in pursuit of improved air quality. Environmental classification of automobiles and heavy-duty trucks was introduced in 1994. Sweden has a differentiated energy tax on diesel and leaded fuel to take account of environmental classification. The excise duty on new vehicles is also differentiated according to the environmental classification of the vehicles. Leaded gasoline was withdrawn from the Swedish market altogether in 1994.

Sweden was one of the first countries to order a rapid phase-out of CFCs, which deplete the ozone layer. CFCs have been banned since 1995 in new cooling, heating and other acclimatization facilities. However, further action is needed to control the alternatives as well as the final phase-out of CFCs in existing installations.

The Swedish market for air pollution control equipment is mature in part because the Swedish government has issued guidelines requesting both municipalities and industry to invest in sound pollution control equipment.

Economic incentives/disincentives have been a part of Swedish environmental policy since the 1970s. Evaluation studies have confirmed that these programs produce the desired effect. Taxes and charges have frequently been used to finance environmental and nature conservancy measures, less frequently for the purpose of directly influencing market demand.

Two end-users, the industry and the municipalities divide the market for air pollution control equipment. The municipalities’ share is approx. 60%-65%.

B) Water/Wastewater Treatment

The Swedish market for water pollution treatment is a very mature market. Already in the late 1960s, the Swedish government introduced environmental legislation in this field and at the same time made large sums of money available to industries and municipalities for investments in water pollution/treatment control equipment.

The current most important water treatment project in Sweden is the nitrogen reduction program in the larger coastal treatment plants. Reports on overproduction of algea and dying seabeds are some of the observations, which prompted vigorous protection measures. In 1988 and 1991 the government decided to increase the requirement for nitrogen reduction to 50 percent of municipal sewage treatment works. The law affects about 70 large and medium-sized treatment plants along the west, south and east coasts including the county of Stockholm. Together they serve half of the country’s population of the equivalent of 4.5 million people.

Another important issue is the handling of sewage sludge from the treatment plants, and especially how it will be disposed of. This concerns large volumes and special problems, such as, the presence of heavy metals in the sludge. The nutrients in the sewage water stem mainly from consumed food and should therefore be returned to the farmland after the treatment process to offset the use of artificial fertilizers. Toxic metals and other impurities must naturally not be present in the sludge.

The extra burden placed on the sewage system and treatment plant by surface water, drainage and penetrating groundwater sometimes results in the discharge of untreated sewage to sensitive lakes and other waters. Because this water is in principle clean one ought to take care of it locally rather than allow it to be diluted, with the risk of discharges and higher treatment costs as a result. It is also important to continually maintain the treatment network so that expensive leakage is avoided.

International cooperation in the treatment of polluted water is becoming increasingly important. Many countries pollute the sea around Sweden. In order to clean the Baltic Sea it is necessary to have strict water protection measures and treatment of all the municipal and industrial sewage in all the countries in the region. In this context, Sweden is involved in environmental protection programs and cooperates with, for example, the Baltic States, Poland and industries for investments in wastewater treatment plants.

C) Waste Management

The largest amount of waste in Sweden is generated by industry, with the mining industry being the sector that generates the most. The forest-based industry, the food industry and the iron and steel industry are next in line of waste generators. As a rule, industry-specific waste from large industries is managed where it is produced. Most of the waste referred to as consumption waste is managed by municipalities or companies assuming extended producer responsibility on the behalf of the producers.

The Swedish Government is promoting the development of new waste technologies, based on sustainable development principles. There is no definitive solution to waste management problems. Instead, there is an urgent need to minimize overall quantity and the harmfulness of generated waste while promoting continuous upgrading of collection, sorting, recycling, treatment and disposal techniques. There is also a steadily growing public awareness of the issues associated with waste management.

Efforts to reach the goal set up by the government for waste management are continuing in a satisfactory way. The quantity of waste deposited as landfill is decreasing and biological treatment is increasing. The quantity incinerated with energy recovery is also growing.
The total quantity of waste shows no decrease from the previous year. On the contrary, it increased by 3 percent in 1998, amounting to 3,810 000 tons (3,700 000 in 1997).
More household waste has been directed towards material recycling. The degree of recycling has thus increased from 25 per cent to 26.5 per cent. This increase consists to a large extent of scrap metal, electronic waste and white goods.

Sweden’s central policy objective is to reduce landfilled waste by fifty to seventy per cent by the year 2005, compared to 1994 (excluding mine waste). This is to be achieved by a ban on land filling of combustible and organic waste that will take effect in the year 2002 and 2005 respectively. The waste tax introduced on January 1, 2000, further reduces the amount of waste going to landfill.

IV. Market Opportunities for U.S. Firms:

The import climate is open and the Swedish market is very receptive to U.S. products. American firms interested in entering the Swedish market should establish a partnership or a joint venture with a Swedish company, or appoint an importer/agent to represent them on the market. Importers and agents have distribution channels already set up and are well connected with the end-users. Licensing should also be considered as a way to successfully enter the market. To sell directly from the U.S. is not recommended because the market is very complex and difficult to penetrate.

Best prospect areas for U.S. exporters:

Air: New and efficient NOX controlling equipment. Particulate emission collectors, dust extractors, and gas monitors/purifiers.

Water: Swedish technologies and equipment for water pollution treatment/control are considered state-of-the-art and domestic production is strong. According to the domestic industry, the local market demand is not expected to show any major growth potential in the next few years, except for opportunities in the sale of replacement equipment.

Waste: Shredders (for electronic waste handling) and new, improved equipment for converting waste to energy.

V. Major Contacts in Environmental Areas

Commercial Service
American Embassy
Dag Hammarskjolds vag 31
SE-115 89 Stockholm, Sweden
Tel: 46-8-783 53 46
Fax: 46-8-660 91 81
www.usemb.se

Contact: Mr. Thomas M. Kelsey, Senior Commercial Officer
Ms. Catharina Kronstrom, Commercial Specialist

Ministry of the Environment
SE-103 33 Stockholm, Sweden
Tel: 46-8-405 10 00
Fax: 46-8-24 16 29
www.miljo.regeringen.se

Swedish Environmental Protection Agency
SE-106 48 Stockholm, Sweden
Tel: 46-8-698 10 00
Fax: 46-8-29 23 82
www.environ.se

Atervinningsindustrierna
(Swedish Recycling Industries' Association)
Box 5501
SE-114 85 Stockholm, Sweden
Tel: 46-8-783 83 70
Fax: 46-8-660 77 37
www.recycling.se

RFV – The Swedish Association of Waste Management
Prostgatan 2
SE-211 25 Malmo, Sweden
Tel: 46-40-35 66 00
Fax: 46-40-35 66 26
www.rvf.se

Varim – Swedish Association of Suppliers of Effluent and Water Treatment Equipment
Box 5510
SE-114 85 Stockholm, Sweden
Tel: 46-8-782 08 00
Fax: 46-8-660 33 78
www.vibab.se/varim

VI. List of Trade Events

Eco-Tech Scandinavia
Goteborg, September 4-7, 2001

Organizer:
The Swedish Exhibition & Congress Centre
SE-412 94 Goteborg, Sweden
Tel: 46-31-708 80 00
Fax: 46-31-1116 03 30
www.swefair.se

EcoTech covers the areas of waste and recycling technology, air technology, energy technology, environmentally efficient transport and traffic systems, water technology, process technology, environmental safety and materials handling, land and nature conservation, noise and acoustics regulation, working environment and in-door climate, municipal environmental technology, geotechnology, measurement and controlling technology

Elmia Waste & Recycling
Stockholm, September 3-6, 2002

Organizer:
Stockholm International Fairs
SR-125 80 Stockholm
Tel: 46-8-749 41 00
Fax: 46-8-99 20 44
www.stofair.se

Elmia Waste & Recycling covers recycling and recovery, collection/transportation, tips, incineration, hazardous waste, biological treatment, scrap processing, administrative systems, consulting services.

Sources: Central Bureau of Statistics
Swedish Institute
Swedish Environmental Protection Agency